

APPARATUS AND METHOD FOR CARRIER FREQUENCY OFFSET AND PHASE COMPENSATION IN COMMUNICATION SYSTEM

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Abstract of the Disclosure

The present invention provides apparatus and methods for carrier frequency offset and phase compensation, which can compensate the phase rotation of an OFDM symbol resulted from carrier frequency offset between 10 the receiver and transmitter of an OFDM System. The apparatus and method for carrier frequency offset compensation generates an estimated carrier frequency offset according to a phase error between estimated frequency responses of two consecutive received OFDM symbols within the pilot subchannel, and calculates an accumulated phase rotation, according to the 15 estimated carrier frequency offset, for compensating the received OFDM symbol. On the other hand, the apparatus and method for phase compensation generates an estimated residual phase error according to the pilot signal of a frequency offset-compensated OFDM symbol and the original pilot signal transmitted by the transmitter, and compensates the 20 frequency offset-compensated OFDM symbol or a following one according to the estimated residual phase error.